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1 [Techniques for obtaining high performance in Java programs](#)
☒ Ifat H. Kazi, Howard H. Chen, Berdenia Stanley, David J. Lilja
September 2000 **Computing Surveys (CSUR)**, Volume 32 Issue 3

Publisher: ACM ☒ [Request Permissions](#)

 Full text available: ☒ Pdf (816.13 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 77, Downloads (12 Months): 487, Downloads

This survey describes research directions in techniques to improve the performance of Java programming language. The standard technique for Java execution extensive portability of programs. ...

Keywords: Java, Java virtual machine, bytecode-to-source translators, interpreters, just-in-time compilers

2 [Immutability specification and its applications](#)
☒ Igor Pechichanski, Vivek Sarkar

 November 2002 **JGI '02: Proceedings of the 2002 joint ACM-ISCOPE conference**
Publisher: ACM

 Full text available: ☒ Pdf (203.07 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 17, Downloads

A location is said to be *immutable* if its value and the values of selected guaranteed to remain unchanged during a specified time interval. We in *specification*, and ...

Keywords: annotations, immutability, optimization

3 [TotalProf: a fast and accurate retargetable source code profiler](#)
☒ Lei Gao, Jia Huang, Jianjiang Ceng, Rainer Leupers, Gerd Ascheid, Heinrich
October 2009 **CODES+ ISSS '09: Proceedings of the 7th IEEE/ACM international code design and system synthesis**
Publisher: ACM ☒ [Request Permissions](#)

 Full text available: ☒ Pdf (907.72 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 13, Downloads


Profilers play an important role in software/hardware design, optimization

have been proposed to implement profilers. The most widespread approach is Instruction Set Simulation (ISS) ...

Keywords: architecture description language, instruction set simulation, profiling

- 4 A lazy developer approach: building a JVM with third party software
 Nicolas Geoffray, Gaël Thomas, Charles Clément, Bertil Folliot
 September 2008 **PPPJ '08: Proceedings of the 6th international symposium on programming in Java**

Publisher: ACM

Full text available:  Pdf (737.39 KB)

Additional Information: [full citation](#), [abstract](#)


Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 74, Downloads

The development of a complete Java Virtual Machine (JVM) implements knowledge in different areas: garbage collection, just in time compilation, structures, etc. The result is ...

Keywords: BoehmGC, GNU classpath, Java, JnJVM, LLVM

- 5 Survey of code-size reduction methods
 Árpád Beszedes, Rudolf Ferenc, Tibor Gyimóthy, André Dolenc, Konstantin Kar
 September 2003 **Computing Surveys (CSUR)**, Volume 35 Issue 3

Publisher: ACM 

Full text available:  Pdf (443.89 KB)

Additional Information: [full citation](#), [abstract](#)


Bibliometrics: Downloads (6 Weeks): 36, Downloads (12 Months): 266, Downloads

Program code compression is an emerging research activity that is having such as networking and embedded systems. This is because the reduction on network traffic and embedded ...

Keywords: code compaction, code compression, method assessment, ...

- 6 Statistically rigorous java performance evaluation
 Andy Georges, Dries Buytaert, Lieven Eeckhout
 October 2007 **OOPSLA '07: Proceedings of the 22nd annual ACM SIGPLAN programming systems and applications**

Publisher: ACM 

Full text available:  Pdf (1.63 MB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 23, Downloads (12 Months): 178, Downloads


Java performance is far from being trivial to benchmark because it is affected by application, its input, the virtual machine, the garbage collector, the heap, and at run-time causes ...

Keywords: benchmarking, data analysis, java, methodology, statistics

Also published in:

October 2007 **SIGPLAN Notices** Volume 42 Issue 10

- 7 [Revisiting Out-of-SSA Translation for Correctness, Code Quality and](#)
Benoit Boissinot, Alain Darte, Fabrice Pastello, Benoit Dupont de Dinechin,
March 2009 **CGO '09: Proceedings of the 2009 International Symposium on**
Publisher: IEEE Computer Society

Full text available:  Pdf (287.20 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 80, Downloads

Static single assignment (SSA) form is an intermediate program representation. Optimizations can be performed with fast and easy-to-implement algorithms. However, these optimizations create situations where the SSA variables ...

Keywords: SSA form, Compilers, JIT-compilation


- 8 [Optimizing JIT-compilation subsystem for Rotor 2.0](#)



Sophia Chilingarova

October 2006 **OOPSLA '06: Companion to the 21st ACM SIGPLAN symposium on object-oriented programming systems, languages, and applications**

Publisher: ACM 

Full text available:  Pdf (184.57 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 37, Downloads

The poster describes the design and implementation of the optimizing JIT (Rotor) 2.0 virtual machine. This presentation covers overall design of the fast algorithm for the 1st level ...

Keywords: CIL, CLI, JIT-compilation, Rotor, SSCLI, optimization


- 9 [Code generation for just-in-time compiled mobile collector agents](#)

John G. Allen, Jesse S. Allen

May 2003 **VIP '02: Selected papers from the 2002 Pan-Sydney workshop on**

Volume 22

Publisher: Australian Computer Society, Inc.

Full text available:  Pdf (38.50 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 13, Downloads

This paper describes MGEN/x86, a toolkit that simplifies the process of creating just-in-time (JIT) compilers for the x86 series of processor. MGEN produces code based on a user-defined sequence ...

Keywords: JIT, assemble, collector, compiler, mobile, x86


- 10 [Attacking the semantic gap between application programming language](#)



Greg Snider, Barry Shackelford, Richard J. Carter

February 2001 **FPGA '01: Proceedings of the 2001 ACM SIGDA ninth international conference on field-programmable gate arrays**

Publisher: ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (258.65 KB)

Additional Information: full citation, abstract


Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 50, Downloads

It is difficult to exploit the massive, fine-grained parallelism of configuration application programming language such as C, Pascal or Java. The difficulty of the synchronous, concurrent processing ...

11 LLVA: A Low-level Virtual Instruction Set Architecture

Vikram Adve, Chris Lattner, Michael Brukman, Anand Shukla, Brian Gaeke
December 2003 **MICRO 36: Proceedings of the 36th annual IEEE/ACM International Symposium on Microarchitecture**

Publisher: IEEE Computer Society

Full text available:  [Pdf](#) (196.08 KB)


Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 32, Downloads


A virtual instruction set architecture (V-ISA) implemented via a process provides great flexibility to processor designers. Recent examples such as existing hardware instruction ...

12 Wavelet synopsis for data streams: minimizing non-euclidean error

Sudipto Guha, Boulos Harb

 August 2005 **KDD '05: Proceedings of the eleventh ACM SIGKDD international conference on Knowledge discovery in data mining**

Publisher: ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (303.82 KB)


Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 80, Downloads


We consider the wavelet synopsis construction problem for data stream estimation: the data is by constructing a synopsis, whose size, say B is much chosen to minimize a suitable error between ...

Keywords: streaming algorithm, wavelet synopses

13 Design of the Java HotSpot™ client compiler for Java 6

 Thomas Kotzmann, Christian Wimmer, Hanspeter Mössenböck, Thomas Roitzsch
May 2008 **Transactions on Architecture and Code Optimization (TACO)**

Publisher: ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (1.14 MB)

Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 40, Downloads (12 Months): 433, Downloads


Version 6 of Sun Microsystems' Java HotSpot™ VM ships with a redesigned compiler that includes several research results of the last years. The configuration used by default ...

Keywords: Java, compiler, deoptimization, intermediate representation, register allocation

Application of a multi-criteria simulation optimization based DSS

A. Azadeh, S. F. Ghaderi, A. Dabbaghi, M. Dehghanbaghi

July 2007

SCSC: Proceedings of the 2007 summer computer simulation**Publisher**: Society for Computer Simulation InternationalFull text available:  Pdf (209.58 KB)

Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 43, Downloads


In this study we propose a decision support system for a textile dyeing, proposed simulation model itself, enables managers to find a schedule (a combination of decision parameters) ...

Keywords: goal programming, metamodel, multi-criteria decision making, quantitative factors

15 QVM: an efficient runtime for detecting defects in deployed systems

Matthew Arnold, Martin Vechev, Eran Yahav

October 2008

OOPSLA '08: Proceedings of the 23rd ACM SIGPLAN conference on systems languages and applications**Publisher**: ACM Full text available:  Pdf (917.15 KB)

Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 246, Downloads

Coping with software defects that occur in the post-deployment stage is only when the system uses a specific configuration and only under certain production systems until the ...


Keywords: algorithms, reliability, virtual machines

Also published in:

October 2008 **SIGPLAN Notices** Volume 43 Issue 10**16** FlightTracker: A Novel Optical/Inertial Tracker for Cockpit Enhanced

Eric Foxlin, Yuriy Altshuler, Leonid Naimark, Mike Harrington

November 2004

ISMAR '04: Proceedings of the 3rd IEEE/ACM International Workshop on Reality**Publisher**: IEEE Computer SocietyFull text available:  Pdf (410.78 KB)

Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 69, Downloads

One of the earliest fielded augmented reality applications was enhanced projected on the pilot's visor provides geo-spatially registered information about obstacles, maintain situational ...

17 A novel approach for flexible and consistent ADL-driven ASIP design

Gunnar Braun, Achim Nohi, Weihua Sheng, Jianjiang Ceng, Manuel Hohmann, Leupers, Heinrich Meyr

June 2004

DAC '04: Proceedings of the 41st annual Design Automation Conference**Publisher**: ACM Full text available:  Pdf (204.60 KB)

Additional Information: full citation, abstract

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 33, Download

Architecture description languages (ADL) have been established to aid the instruction-set processors (ASIP). Their main contribution is the automation including C compiler, assembler, linker, ...


Keywords: ADL, ASIP, embedded processors

18 [Scratch-pad memory allocation without compiler support for java applications](#)

Nghi Nguyen, Angel Dominguez, Rajeev Barua

September 2007 **CASES '07:** Proceedings of the 2007 international conference on synthesis for embedded systems

Publisher: ACM

Full text available:  Pdf (323.73 KB)

[Additional Information: full citation, abstract](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 73, Download

This paper presents the first scratch-pad memory allocation scheme that interprets language based applications. A scratch-pad memory (SPM) is replaces the hardware-managed cache. Its ...


Keywords: JIT, JVM, compiler, embedded systems, java, memory allocation

19 [LLVM: A Compilation Framework for Lifelong Program Analysis & Transformation](#)

Chris Lattner, Vikram Adve

March 2004 **CGO '04:** Proceedings of the international symposium on Code directed and runtime optimization

Publisher: IEEE Computer Society

Full text available:  Pdf (256.90 KB)

[Additional Information: full citation, abstract](#)

Bibliometrics: Downloads (6 Weeks): 32, Downloads (12 Months): 190, Download


This paper describes LLVM (Low Level Virtual Machine), a compiler framework for lifelong program analysis and transformation for arbitrary programs, by performing compiler transformations at compile-time, ...

20 [Concurrent GC leveraging transactional memory](#)

Phil McGachey, Ali-Reza Adl-Tabatabai, Richard L. Hudson, Vijay Menon, Brian

February 2008 **PPoPP '08:** Proceedings of the 13th ACM SIGPLAN Symposium on programming

Publisher: ACM 

Full text available:  Pdf (470.71 KB)

[Additional Information: full citation, abstract](#)

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 101, Download

We predict that the ever-growing number of cores on our desktops will programming. Two technologies are likely to become mainstream in replacing superior programming model to traditional ...

Keywords: compiler optimizations, concurrent garbage collection, storing transactional memory, virtual machines

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